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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CASCHERA, ANTONIO A

ART UNIT	PAPER NUMBER
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2628

MAIL DATE	DELIVERY MODE
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02/29/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/560,642	Applicant(s) BARENBRUG ET AL.	
	Examiner ANTONIO A. CASCHERA	Art Unit 2628	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 6-8 is/are rejected.
- 7) ☒ Claim(s) 3-5 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in the pending application.

Specification

2. The abstract of the disclosure is objected to because the abstract comprises figure reference numerals which should be omitted. Correction is required. See MPEP § 608.01(b).

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: #350 of Figure 3 and #1340 of Figure 13. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required

corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 1 and 3 are objected to because of the following informalities:
 - a. Claim 1 comprises figure reference numerals which should be omitted from the claim.
 - b. Claim 3 recites the phrase, "...as claimed in claim 2, wherein in the area filter is operative to..." (see lines 1-2 of claim 3) which should read, "...as claimed in claim 2, wherein the area filter is operative to..."

Appropriate correction is required.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claim 8 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

In reference to claim 8, the language of the claim raises questions as to whether the claim is directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. Specifically, the "computer program operative to cause a computer..." as disclosed in claim 8, is the abstract idea

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since it is not explicitly recited as being embodied on, encoded with etc. some sort of computer readable medium. In particular, the MPEP explicitly states that data structures, themselves, are seen as nonstatutory unless further recited as stored, embodied, encoded on some sort or computer readable medium. See MPEP 2106 IV (B)(1) and 2106.01 [R-6].

Further, in anticipation of Applicant's future amendment to claim 8, the specification seems to define a medium that is capable of storing the recited program of the claim as, "...a record carrier...or wired or wireless communication means..." (see lines 28-32 of page 13 of the specification) which the Office deems as nonstatutory. Specifically, the specification of the instant application does clearly suggest to one of ordinary skill in the art that such "medium" could be one of signals, or other forms of propagation and transmission media which fail to be an appropriate manufacture under 35 U.S.C. 101 in the context of computer-related inventions and therefore would necessitate a further 35 USC 101 rejection of the claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 2 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gossett (U.S. Patent 6,232,981) in view of Chen et al. ("Forward Image Mapping." CVC & Dept. of Computer Science, SUNY Stony Brook).

In reference to claims 1 and 8, Gossett discloses an OpenGL compliant hardware display controller providing pixel and texel footprint processing (see column 8, lines 10-24). Gossett discloses the system to comprise of host CPU(s) communicating with graphics subsystem(s) to perform the graphics processing (see column 9, lines 12-20 and Figure 3). Gossett discloses a graphics subsystem comprising of a texture unit (#56 of Figure 4) and SDRAM Texture (see #50 of Figure 4) with the texture unit further comprising a texture cache memory (#74 of Figure 5). Both the SDRAM Texture and texture cache storing texels of a texture map defined in a texture grid space (see column 13, lines 7-18, columns 13-14, lines 66-5, column 14, lines 41-16 and Figure 6). Gossett also discloses the graphics system comprising a raster unit which supplies the texture unit with texture coordinates and texture attributes which is further detailed to include s and t coordinates, RGBA information, per vertex information and coverage data (see column 11, lines 29-35 and 38-41). Note, the Office interprets the raster unit of Gossett functionally equivalent to Applicant's rasterizer since the raster unit provides texture coordinates and coverage data which inherently describe associated texture data that at least partly falls within primitive data and associated attributes thereto. Gossett also discloses the system to comprise of a shader unit which includes performing bi-linear interpolation, per-pixel lighting, pre-and-post-lighting texture environments, multi-fragment polygon antialiasing and per-fragment tests and operations (see column 10, lines 53-57) which the Office interprets as inherently performing the transforming of texture data to color data as claimed. Lastly, Gossett ends the entire processing of texturing a primitive by resampling a filtered, warped, reconstructed image (see column 3, lines 45-52) which the Office interprets is performed by the display backend (#44 of Figure 3, see column 11, lines 1-9). Although Gossett does disclose performing a texture filtering (see #80

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of Figure 5 and column 13, lines 37-45), Gossett does not explicitly disclose the filtering yielding a respective contribution factor providing a measure of overlap of the corresponding texel with a primitive in texture space, however Chen et al. does. Chen et al. discloses a forward mapping algorithm used in texture mapping (see page 89, abstract, lines 1-2). Chen et al. discloses the algorithm to explicitly disclose antialiasing using footprint filtering (see page 93, section 4.2) which computes all source image pixel data, the source image earlier defined as the surface image or texture data (see sections 4.2-4.2.1) thereby allowing the Office to interpret the source pixels equivalent to the texels of Applicant's claims. Further support for such an equivalency can be found in section 2.1, right hand column 2nd paragraph, and section 2.2, page 91 wherein Chen et al. discloses the source image representing a 3D surface (see Figure 2) and the source pixels defined with u,v (texture) coordinates. It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the filtering techniques of Chen et al. with the display processing techniques of Gossett in order to provide antialiased display data in a display system while conserving processing cycles and data bandwidth (see section 1, page 90, left hand column, paragraphs 2-3 of Chen et al.).

In reference to claim 2, Gossett and Chen et al. disclose all of the claim limitations as applied to claim 1 above in addition, Chen et al. discloses the footprint filtering to provide a percentage of area overlap of a texture pixel to a target image since Chen et al. discloses the profile of the filter deciding the weights of the contributing texture pixels within the footprint (see section 4.2, page 93, right hand column). It would have been obvious to one of ordinary skill in the art at the time the invention was made to implement the filtering techniques of Chen et al. with the display processing techniques of Gossett in order to provide antialiased display

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data in a display system while conserving processing cycles and data bandwidth (see section 1, page 90, left hand column, paragraphs 2-3 of Chen et al.).

In reference to claim 6, Gossett and Chen et al. disclose all of the claim limitations as applied to claim 1 above. Gossett explicitly discloses the system to comprise of multiple CPUs, at least one memory unit, a display (see #32, 36, 42, 44 and “To Monitor” of Figure 3) and a graphics subsystem as disclosed in the rejection of claims 1 and 7 above.

In reference to claim 8, Gossett and Chen et al. disclose all of the claim limitations as applied to claim 7 above. Gossett further discloses the CPUs of the system operating upon OpenGL software commands (see column 9, lines 12-15) which the Office interprets as equivalent to Applicant’s “computer program.”

Allowable Subject Matter

7. Claims 3-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Note, claim 3 further suffers from minor informalities, as seen above, which must be corrected for upon granting of allowance of the claim.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Antonio Caschera whose telephone number is (571) 272-7781. The examiner can normally be reached Monday-Thursday and alternate Fridays between 7:00 AM and 4:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kee Tung, can be reached at (571) 272-7794.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

571-273-8300 (Central Fax)

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (571) 272-2600.

aac

2/26/08

Antonio Caschera
Patent Examiner